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PRINCIPLES FOR SUPERFUND CLEANUP IN THE 21st CENTURY

Introduction

The Superfund program has been in existence for 25 years. The reforms begun in 1993 to make the program faster, fairer, and more effective are fully implemented and being further refined. The program has matured, and is being further influenced by several factors.

- There are more sites ready for construction than funds available to start work. In addition, construction is complete at many sites, requiring a new emphasis on long-term stewardship at these sites.
- Superfund cleanup processes now explicitly consider and ultimately support future site use and community land revitalization goals in ways that help ensure protection of human health and the environment.
- Alternative Federal and State remediation programs such as the Brownfields program have matured and now handle many contaminated sites that previously would have been referred to the Superfund program, resulting in more complex, expensive sites coming to Superfund.
- Recent external evaluations of the program emphasize the need to put more of EPA's Superfund appropriation towards site cleanups.

In light of these factors, this paper establishes principles for Superfund cleanups in the 21st century, for Regions to apply as they address sites at all stages of the cleanup process. Currently, Regions are implementing many of these principles, to varying degrees. The purpose of this paper is to emphasize that for every site considered by Superfund, Regions must apply comprehensive planning to ensure that these principles are applied at appropriate stages.

1. Superfund Targets Sites that Pose Significant Risks

EPA needs to consider the scope of the total contaminated sites problem, what states are doing to address sites, and how EPA's efforts can complement state efforts. The Superfund program in the 21st century works with States to locate and address contaminated sites with the most serious human health and ecological risks. For sites considered for Superfund cleanup, Regions and States conduct preliminary assessments (PAs) to determine whether a removal action is necessary and whether the site poses potential risks to public health. The Superfund removal program addresses immediate risks to the public regardless of whether the site is placed on the National Priorities List (NPL). At sites requiring further investigation, Superfund will employ new tools and strategies to improve and streamline the site investigation (SI) process. Triad, a process for flexible, targeted sampling, helps provide a more focused strategy to characterize the site, and allow faster site decisions based on the results of real-time field analysis.

2. Regions Consider Alternative Cleanup Program Options and Funding Sources

For all identified high-risk sites, Regions will select the most appropriate cleanup program to ensure timely and protective cleanup that will also consider and support future beneficial uses of the site. Regions will consider the potential for innovative applications of State, Tribal, and other Federal agency authorities and resources, other EPA program authorities and resources, as well as potentially responsible party (PRP) resources. The Region determines if Superfund remediation is appropriate or if another authority should address the site, e.g., Superfund Removal, Superfund Alternative Sites, State remediation, other Federal agencies, RCRA Corrective Action, Brownfields, Leaking Underground Storage Tank (UST), Clean Water Act, Great Lakes Legacy Act, Toxic Substances Control Act, and Safe Drinking Water Act. EPA coordinates effectively with these programs, and maintains systems to ensure that referred sites are addressed in a timely and appropriate manner.

3. Appropriate Sites are Listed on the NPL

Sites continue to be listed on the National Priorities List (NPL). EPA primarily uses the Hazard Ranking System (HRS) to determine which sites to propose on the NPL. Of those sites, EPA proposes the most appropriate sites first to help manage resources. Some factors EPA considers in prioritizing HRS candidate sites include the risk to human health and the environment, need for urgent response, maintenance of a strong enforcement program, leverage of other cleanup programs, support for listing from State, Tribes, and communities, and program management considerations.

4. Cleanup Decisions Consider Future Reuse of Sites

At every cleanup site, Superfund will work with its partners to fully explore and consider future land use assumptions in cleanup decisions. While cleaning up sites and making them protective of human health and the environment, Superfund will continue to employ processes, tools, and information systems that better enable communities to communicate their future land use preferences and plans. Integrating realistic assumptions of future land use into Superfund response actions is an important step toward facilitating the beneficial reuse and revitalization of sites following cleanup.

5. Cleanup Decisions are Based on Sound Science and Utilize Innovative Technologies

Superfund continues to be at the forefront in developing new science and technology. Superfund risk assessment and risk management decisions utilize the most current peer-reviewed science. Use of innovative technologies is facilitated through cost and performance information made available from Superfund and other Federal, State, and private sector clean up efforts. The program also works closely with its science partners (ORD, NIEHS, ATSDR, and the Hazardous Substance Research Centers) to ensure all the research activities funded by Superfund are focused on priority removal/remediation needs, are well coordinated among all the groups, and utilized in the field as soon as possible. The National Decontamination Team will be responsible for resolving the difficult technical issues involved in decontamination of buildings, public infrastructures, and environmental media in the aftermath of a weapons of mass destruction event or other nationally significant event.

6. Superfund Pursues Enforcement First

Superfund continues to emphasize an "enforcement first" strategy and aggressively uses all its enforcement tools, including Unilateral Administrative Orders, Administrative Orders, and Consent Decrees. EPA will look for PRPs throughout the removal and remedial processes, and pursue PRPs identified later in the process for an appropriate portion of the site work or costs. EPA actively pursues liable, viable PRPs for performance of work and cost recovery and establishes and manages special accounts throughout the cleanup process to minimize the need for Fund money at the site

7. Megasites Are Subdivided for Appropriate Management

Mega-sites (large, complex and costly sites in which total cleanup costs are expected to equal or exceed $50 million) are subdivided for effective management. The best approach to address each subdivision is determined by a number of factors, including type and severity of risk, other programs that might contribute to the cleanup, and anticipated operable units. As in the case of less complex sites, taking account of potential reuse and cleanup options assists in driving the systematic planning and dynamic field activities that could assist in subdividing the sites. Such planning takes place before the site or portions of it are considered for NPL listing, and enables EPA to refer to the NPL those portions of the site that must be handled by Superfund. Coordination of multiple cleanup programs operating at such megasites is handled by an oversight group with local, state, and federal agency representatives. Assistance grants are available to the communities to help them participate meaningfully. The use of consistent performance measures by the Superfund, RCRA Corrective Action, UST and Brownfields programs facilitates monitoring the progress in each of their portions of the megasite. The Superfund prioritization panel, which makes funding recommendations for remedial actions, will annually review funding going towards mega sites for potential cost saving measures.

8. Funding for New Remedial Actions is Based on Prioritization Factors

The Superfund Program reviews sites that are ready for construction using criteria based primarily on risk. While high risk sites will always receive immediate attention, the program will continue to monitor and evaluate sites that do not receive funding, and look for alternative approaches to address these sites. EPA will make public its funding decisions implementing cleanups.

9. Workplans Are Developed For Each Site in Construction

A multi-year work plan is developed for sites in construction in consultation with the community. The plan identifies each major remedial action that needs to take place on each operable unit, the time necessary to complete that action, and the estimated cost. The plan should address anticipated costs through construction of the final remedy to post-construction monitoring, O & M, and the first 5 year review. In site planning, EPA considers non cost factors as well, such as where redevelopment potential and innovative technology deployment may be appropriate as the site progresses through the investigative and cleanup phases.

10. Superfund Addresses Long-Term Stewardship Needs

The Superfund Program of the 21st century supports a vigorous post construction completion program to ensure that remedial actions provide for the long-term protection of human health and the environment and return sites to beneficial uses. Regions periodically review remedies involving long-term operations (e.g., caps on waste and ground water restoration) using an Environmental Management Systems (EMS) approach involving a continuous cycle of planning, implementing, reviewing, and improving practices at each site. As a result of these periodic reviews, Regions improve performance and reduce operating costs of remedies while assuring continued protectiveness. Regions continue to document the performance and protectiveness of remedies in the five-year reviews conducted at every site in which contamination was left in place. Regions also monitor institutional controls implemented by State and local governments as part of the remedy.

11. The Superfund Database Supports the Program and Meets a Broad Range of Information Needs

CERCLIS is fully modernized to report all essential information on program and enforcement performance, including the new measures designed for consistency among all site cleanup programs. These new measures report on interim milestones such as site assessment, remedy selection, human exposures and groundwater under control, as well as cleanup completed and acres of land ready for reuse. The measures also track certain enforcement milestones as well as site cleanup work performed by PRPs and by using Fund money. Regions keep CERCLIS up-to-date and accurate to support program planning and accomplishments reporting, and so that most Congressional and press inquiries can be answered using CERCLIS. CERCLIS is appropriate for meeting additional remedial and removal program requests, such as OMB's PART review.

12. The Superfund Program Actively Evaluates Whether its Program Is Operated Efficiently

The Superfund Program ensures that all its resources are efficiently and effectively utilized. Periodic reviews of Superfund dollars and Full-Time Equivalent (FTE) employees will ensure Superfund's focus on protection of human health and the environment. Annual deobligation of unneeded project funds from EPA contracts and agreements with States and other Federal agencies, innovative contracting approaches for Fund-lead cleanups, and close monitoring of reimbursable funds from State Superfund contracts and PRP special accounts provide additional resources to fund new start remedial actions.

The Superfund Program Office maintains a robust program evaluation function designed to assess removal and remedial program performance to ensure that critical program goals, outputs and outcomes are achieved in an effective and efficient manner. Strategic trends evaluation is used to identify emerging environmental problems and workforce needs, and to advise all the OSWER cleanup programs on appropriate programmatic or policy responses.

13. Superfund Is a Model of Public Outreach and Involvement

Superfund takes seriously its responsibility to engage stakeholders at each site in an appropriate and meaningful way. Stakeholder involvement is an integral part of cleanup planning and implementation. It occurs early and is sustained throughout all stages of site work. Superfund makes available a variety of technical assistance programs to enable more effective stakeholder participation. Superfund provides effective outreach and communicates program progress for removal and remedial actions. EPA proactively disseminates information about sites, on a community level and in the form of national program progress. Measures of success are posted on the internet, along with accurate profiles of each site. In addition, planning, training and exercises are conducted by EPA in close coordination with federal, state and local partners.

14. Superfund Provides State-of-the-Art National Emergency Preparedness and Response

EPA's core emergency response program responds quickly and effectively to chemical, oil, biological, and radiological releases. Established coordination mechanisms enable timely and effective response to simultaneous, large-scale national emergencies. All of EPA's preparedness and response programs in the Regions consistently implement the Agency's National Approach to Response. EPA's On-Scene Coordinators are equipped with state-of-the-art equipment and training, and use the latest scientific methods for detection, analysis and response. Agency emergency response will manage large volumes of data actively and consistently using consistent crisis and information management systems.